

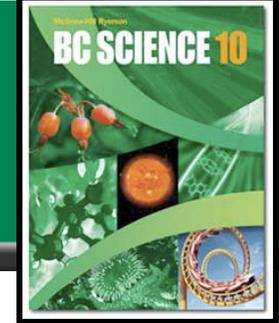
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- for students to copy in their own hand-writing
 - ◆ in order to complete their class notes
 - ◆ if student did not have enough time in class
 - ◆ if student was away and missed this section
- for assistants and tutors to follow progress of the concepts taught

Photocopied/printed notes can not be used during the Unit Notebook Check in class.

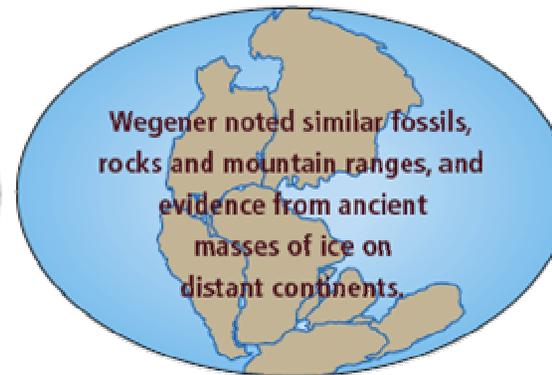
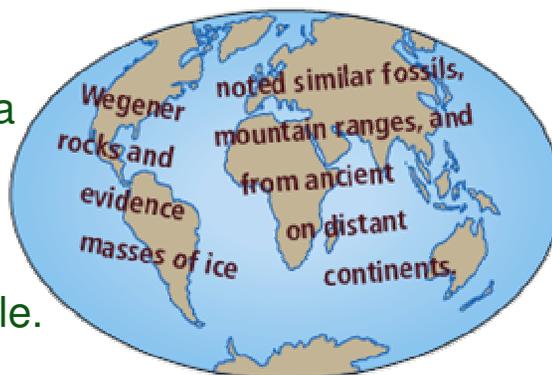
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12.1 Evidence for Continental Drift



- **Early maps of the world caused Wegener to propose the continental drift theory.**
 - ◆ **The continents looked as though they might fit together like puzzle pieces.**
 - **The continental shelves actually fit together even better.**
 - ◆ **The original, supercontinent was named *Pangaea* by Wegener.**
 - ◆ **Wegener also realized that other evidence also supported his theory.**
 - **There were matching geologic features and rocks on different continents.**
 - **There were matching fossils, like *Mesosaurus*, on different continents.**
 - **There was evidence of different climates (eg. glaciers) on warm continents.**

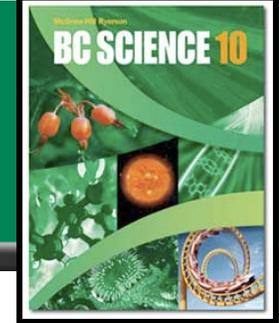
Like pieces of a jigsaw puzzle, the continents fit together into one, large whole.



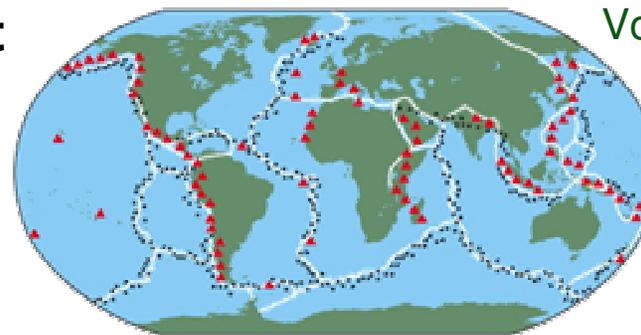
See pages 506 - 509

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How Can Continents Move?



- **Wegener's evidence for continental drift didn't explain how entire continents could change locations.**
 - ◆ **New scientific equipment allowed scientists to measure the slow, but steady, drift of Earth's tectonic plates.**
 - ◆ **It was noted that earthquakes and volcanoes appear in certain patterns, which happen to be along the edges of tectonic plates.**
 - ◆ **Mapping of the ocean floor revealed the Mid Atlantic Ridge, a long mountain range running down the middle of the Atlantic ocean.**
 - ◆ **Rocks taken from the Mid Atlantic ridge were younger than other ocean rocks.**
 - ◆ **Sediments along the Ridge became thicker further away from the ridge.**
 - ◆ **Paleomagnetism shows that iron-based rocks along the ridges are striped with reversing magnetic fields.**



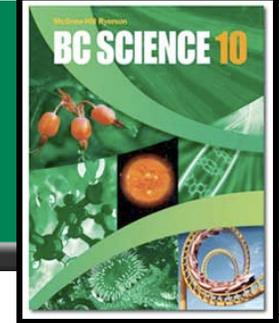
▲ Volcano • Earthquake — Plate boundary

Volcanoes are frequently found on boundaries between tectonic plates.

See pages 510 - 512

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Sea Floor Spreading: An Explanation



- **Hess suggested that magma rose to form new rock at certain places.**
 - ◆ Magma (melted rock), rises and falls like warm and cold liquids.
 - ◆ The convection current of magma formed a spreading ridge where it broke through Earth's crust.
 - Like a “new crust” conveyer belt
 - Magnetic striping of basalt rock shows long stripes of new rock moving away from ocean ridges, and also reveals the direction of Earth's magnetic field at that time.
- **Wilson then unified the ideas of Wegener and Hess into the plate tectonic theory.**
 - ◆ Continental drift occurs because of areas like these ridges, that push along tectonic plates floating on Earth's surface.
 - ◆ geologic hot spots are anywhere magma rises to Earth's surface.

See pages 512 - 513

[Take the Section 12.1 Quiz](#)

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